

WHAT IS CLAIMED:

1. In a vehicle having an anti-lock braking system (ABS), a method of controlling the ABS, comprising:
  - determining one or more natural vibration frequencies of the vehicle;
  - selecting a nominal ABS response to a brake request;
  - altering the selected ABS response to avoid exciting the powertrain at the one or more determined frequencies.
2. The method of claim 1, comprising the step of determining which of the determined frequencies may be excited by the nominal ABS response.
3. The method of claim 2, wherein the step of determining which of the natural frequencies may be excited by the nominal ABS response comprises correlating a set of normally appropriate responses with the determined natural frequencies.
4. The method of claim 1, comprising the step of determining whether the selected nominal response will excite one of the determined natural frequencies.
5. The method of claim 1, wherein the altering step comprises delaying the nominal ABS response for a selected period of time.
6. The method of claim 1, wherein the altering step comprises accelerating the nominal ABS response.

7. The method of claim 1, wherein the nominal ABS response comprises pulsing the vehicle's brakes and the altering step comprises altering the rate at which the brakes are pulsed.

8. A method of controlling an anti-lock braking system (ABS) to avoid exciting a natural vibration frequency of a vehicle, comprising:

developing a set of vehicle natural frequencies that may be excited by the ABS;

selecting an ABS response to a driving event requiring actuation of the ABS;

determining whether the selected ABS response may excite any of the frequencies in the developed set; and,

altering the selected ABS response to avoid exciting any of the frequencies in the developed set.

9. The method of claim 8, wherein the developing step is performed by:

determining the natural frequencies of the vehicle; and,

selecting the determined natural frequencies that are excited by the ABS.

10. The method of claim 9, wherein the natural frequencies are selected by correlating the results of plurality of ABS responses with the determined natural frequencies to thereby establish which of the natural frequencies are excited by the plurality of ABS responses.

11. The method of claim 8, further comprising the step of storing the set of frequencies in a memory, and wherein the determining step comprises comparing the selected ABS response with each of the frequencies stored in the memory.

12. The method of claim 8, wherein the altering step includes delaying the execution of the selected ABS response.

13. The method of claim 8, wherein the altering step comprises accelerating the execution of the selected ABS response.

14. The method of claim 8, wherein the altering step comprises altering the rate at which the ABS pulses the brakes of the vehicle.

15. A system for controlling an anti-lock braking system (ABS) to avoid exciting a natural vibration frequency of a vehicle, comprising:

computer memory for storing a set of vehicle natural frequencies that may be excited by the ABS, and for storing a set of possible ABS responses to driving conditions requiring actuation of the vehicle's ABS; and,

a set of programmed instructions for comparing a proposed ABS response with each of the natural frequencies stored in the memory.

16. The system of claim 15, wherein the programmed instructions include instructions for altering the proposed ABS response.

17. The system of claim 15, including a data input device for transferring the frequencies stored in the memory to the ABS.